



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

**NOTICE OF ALLOWANCE AND ISSUE FEE DUE**

MM21/0909

HILL & SIMPSON  
SEARS TOWER 85TH FLOOR  
233 SOUTH WACKER DRIVE  
CHICAGO IL 60606

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
08/818,239	03/14/97	018	CHRISTIANSON, K /	2813 09/09/99
First Named Applicant	TAYANAKA,	35 USC 154(b) term ext. =	0 Days.	

TITLE OF INVENTION METHOD FOR MAKING THIN FILM SEMICONDUCTOR (AS AMENDED)

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
0 P97.0027	438-762.000	B20	UTILITY	NO	\$1210.00	12/09/99

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.**

**THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.**

**HOW TO RESPOND TO THIS NOTICE:**

**I. Review the SMALL ENTITY status shown above.**

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
- B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

**II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.**

**III. All communications regarding this application must give application number and batch number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.**

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

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**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/818,239	03/14/97	TAYANAKA H	P97.0027

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EXAMINER
CHRISTIANSON, K

ART UNIT	PAPER NUMBER
2813	15

DATE MAILED: 09/09/99

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Notice of Allowability

Application No.

08/818,239

Applicant(s)

Tayanaka

Examiner

Keith Christianson

Group Art Unit

2813



All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course.

☒ This communication is responsive to papers filed on 8/16/99.

☒ The allowed claim(s) is/are 1-16,26,27; now renumbered as 1-18.

☐ The drawings filed on \_\_\_\_\_ are acceptable.

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

\*Certified copies not received: \_\_\_\_\_.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE **THREE MONTHS** FROM THE "DATE MAILED" of this Office action. Failure to timely comply will result in ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.

☒ Applicant MUST submit NEW FORMAL DRAWINGS

☐ because the originally filed drawings were declared by applicant to be informal.

☒ including changes required by the Notice of Draftsperson's Patent Drawing Review, PTO-948, attached hereto or to Paper No. 7.

☐ including changes required by the proposed drawing correction filed on \_\_\_\_\_, which has been approved by the examiner.

☐ including changes required by the attached Examiner's Amendment/Comment.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any response to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

## Attachment(s)

☐ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 11

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

☐ Interview Summary, PTO-413

☐ Examiner's Amendment/Comment

☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

☒ Examiner's Statement of Reasons for Allowance

Art Unit: 2813

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Applicant's arguments concerning claims 1-4 and 7-16 were found to be persuasive and accordingly the rejection to these claims based on 35 U.S.C. 103(a) is withdrawn. In particular, the applicant's arguments concerning In re Harza pertaining to duplication of identical elements while in the instant application the elements in question have different porosities was found to be persuasive.

### ***Terminal Disclaimer***

3. The terminal disclaimer filed on 8/16/99 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US 5,811,348 has been reviewed and is accepted. The terminal disclaimer has been recorded.

### ***Discussion of Prior Art***

4. The ability to manufacture devices such as solar cells with a flexible substrate has been of interest for some time in order to improve the shock resistance of said devices. Matsushita et al. (US 5,811,348) describe a method of fabricating a semiconductor thin film suitable for transfer to

Art Unit: 2813

a flexible substrate, however it uses a single porous layer. Nothing in the prior art describes or suggests how to grow semiconductor thin films using multiple porous layers of differing porosities in order to better separate the thin film from its growth substrate.

### *Reasons for Allowance*

5. The following is an examiner's statement of reasons for allowance:

The prior art does not describe or suggest a method for making a thin film semiconductor comprising the steps of: providing a semi-conductor substrate having a surface; anodizing the semi-conductor substrate to provide a first porous layer adjacent the surface having a first porosity; anodizing the semi-conductor substrate to provide at least one second porous layer adjacent the first porous layer opposite the surface, each said second porous layer having a second porosity greater than said first porosity; forming a semi-conductor film on the first porous layer; and separating the semi-conductor film from the semi-conductor substrate along a line of relative weakness defined in or adjacent one of second porous layers.

### *Conclusion*

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Art Unit: 2813

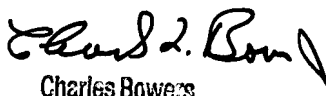
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith Christianson whose telephone number is (703) 305-4029. The examiner can normally be reached on Monday to Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Bowers, can be reached on (703) 308-2417. The fax phone number for this Group is (703) 308-7722.

KC

KC

September 8, 1999

  
Charles Bowers  
Supervisory Patent Examiner  
Technology Center 2800